

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 April 2004 (15.04.2004)

PCT

(10) International Publication Number
WO 2004/032036 A1

(51) International Patent Classification⁷: **G06K 13/08**,
H01R 13/64

TOMITA, Mitsuhiro [JP/JP]; 6-5-719 Nishi-tsuruma,
3-chome, Yamato-shi, Kanagawa 242-0005 (JP).

(21) International Application Number:
PCT/US2003/030528

(74) Agent: **CALDWELL, Stacey, E.**; Molex Incorporated,
2222 Wellington Court, Lisle, IL 60532 (US).

(22) International Filing Date:
26 September 2003 (26.09.2003)

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,
SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN,
YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
290654/2002 3 October 2002 (03.10.2002) JP

(71) Applicant (*for all designated States except US*): **MOLEX
INCORPORATED** [US/US]; 2222 Wellington Court,
Lisle, IL 60532 (US).

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

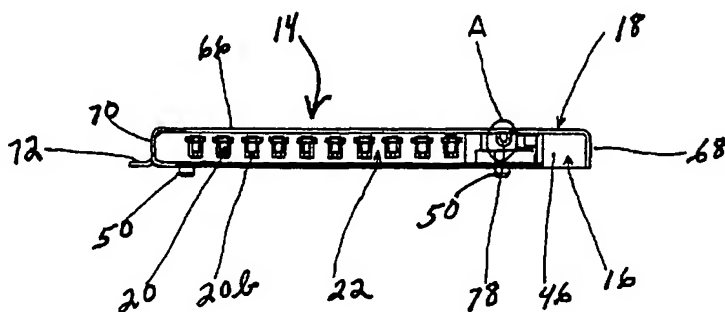
(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **MATSUMOTO,**
Yasuyoshi [JP/JP]; Heights-Ichikawa-Daisan #305, 12-19
Chuo, 6-Chome, Yamato-shi, Kanagawa 242-0021 (JP).

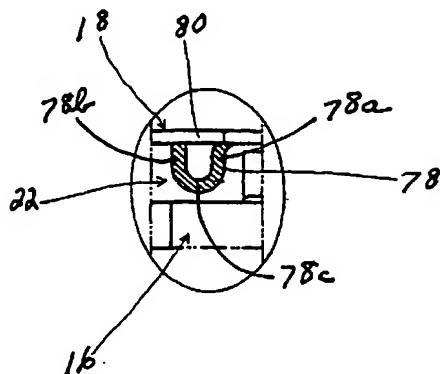
[Continued on next page]

(54) Title: MEMORY CARD CONNECTOR WITH MEANS FOR PREVENTING ERRONEOUS CARD INSERTION

a



b



(57) Abstract: A memory card connector (14) includes an insulating housing (16) defining a front receptacle area communicating with an interior cavity (22) for receiving a memory card. A plurality of terminals (20) are mounted on the housing in a side-by-side array transversely across a rear of the housing. The terminals (20) have contact portions (20b) at a rear of the cavity for engaging contacts on a top side of the memory card. A sheet metal shell (18) covers at least a portion of the insulating housing (16) and includes a cover plate overlying at least a portion of the cavity. The shell (18) has a wrong insertion-proof projection (78) formed out of the cover plate and extending downwardly into the cavity and into a slot in the top of the memory card when the card is properly inserted into the cavity. The projection prevents an erroneously inserted memory card from engaging the contact portions of the terminals. The projection (78) is bent into an elbow-shaped cross-sectional configuration to prevent scarring or cracking of the memory card when erroneously inserted into the cavity.

W 2004/032036 A1



Published:

- with international search report
- with amended claims

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Date of publication of the amended claims: 24 June 2004

AMENDED CLAIMS

[received by the International Bureau on 10 May 2004 (10.05.2004);
original claims 1-7 replaced by new claims 1-7 (2 pages)]

1. A memory card connector (14), comprising:
2 an insulating housing (16) defining a front receptacle area (24) communicating with
an interior cavity (22) for receiving a memory card (24);
4 a plurality of terminals (20) mounted on the housing in a side-by-side array
transversely across a rear (44) of the housing, the terminals having contact portions (20b) at a rear
6 of the cavity for engaging contacts (38) on a top side (32) of the memory card;
a sheet metal shell (18) covering at least a portion of the insulating housing and
8 including a cover plate (66) overlying at least a portion of said cavity, the shell having a wrong
insertion-proof projection (78) formed out of said cover plate (66) and extending downwardly into
10 the cavity (22) and into a slot (40) in the top of the memory card when the card is properly
inserted into the cavity, the projection (78) preventing an erroneously inserted memory card from
12 engaging the contact portions (20b) of the terminals (20), and the projection being bent into
elbow-shaped cross-sectional configuration to prevent scarring or cracking of the memory card
14 (24) when erroneously inserted into the cavity.

2. The memory card connector of claim 1 wherein said wrong insertion-proof
2 projection (78) is bent into a generally U-shaped configuration.

3. The memory card connector of claim 1 wherein said wrong insertion-proof
2 projection (78) is bent into a generally L-shaped configuration.

4. The memory card connector of claim 1 wherein said wrong insertion-proof
2 projection (78) is bent into a generally J-shaped configuration.

5. The memory card connector of claim 1 wherein said wrong insertion-proof
2 projection (78) is bent into a generally V-shaped configuration.

6. The memory card connector of claim 1 wherein said sheet metal shell (18)
2 includes a pair of depending opposite side walls (68,70) integral with opposite longitudinal edges
of said cover plate (66).

- 2 7. The memory card connector of claim 6 wherein said side walls (68, 70) include mounting tabs (72) bent outwardly at bottom edges of the walls for mounting the connector on a circuit board.